CHAPTER 6

RIGGING THE M998 HMMWV (FOUR-SEATER) WITH GRC/206 AIR FORCE PALLET ON A TYPE V PLATFORM

Section I
LOW-VELOCITY AIRDROP

6-1. Description of Load

The M998 HMMWV (four-seater) (Figure 6-1) is 180 inches long. The height is 97 inches, reducible to 72 inches. The width is 86 1/2 inches. The truck weighs 5,660 pounds with radio equipment GRC/206 Air Force pallet. Other equipment included on the load is one cable spool, two 5-gallon fuel cans, two 5-gallon water cans, one roll of field wire, one set of slave cables, and one camouflage net with support poles. Also included with this load are one shovel, one axe, two sets of antennas, 2 quarts of oil, 1 quart of transmission fluid, one funnel, and one fuel nozzle. The truck weighs 6,020 pounds with 1/2 tank of fuel and the equipment installed. The load requires two G-11B or three G-11A cargo parachutes.

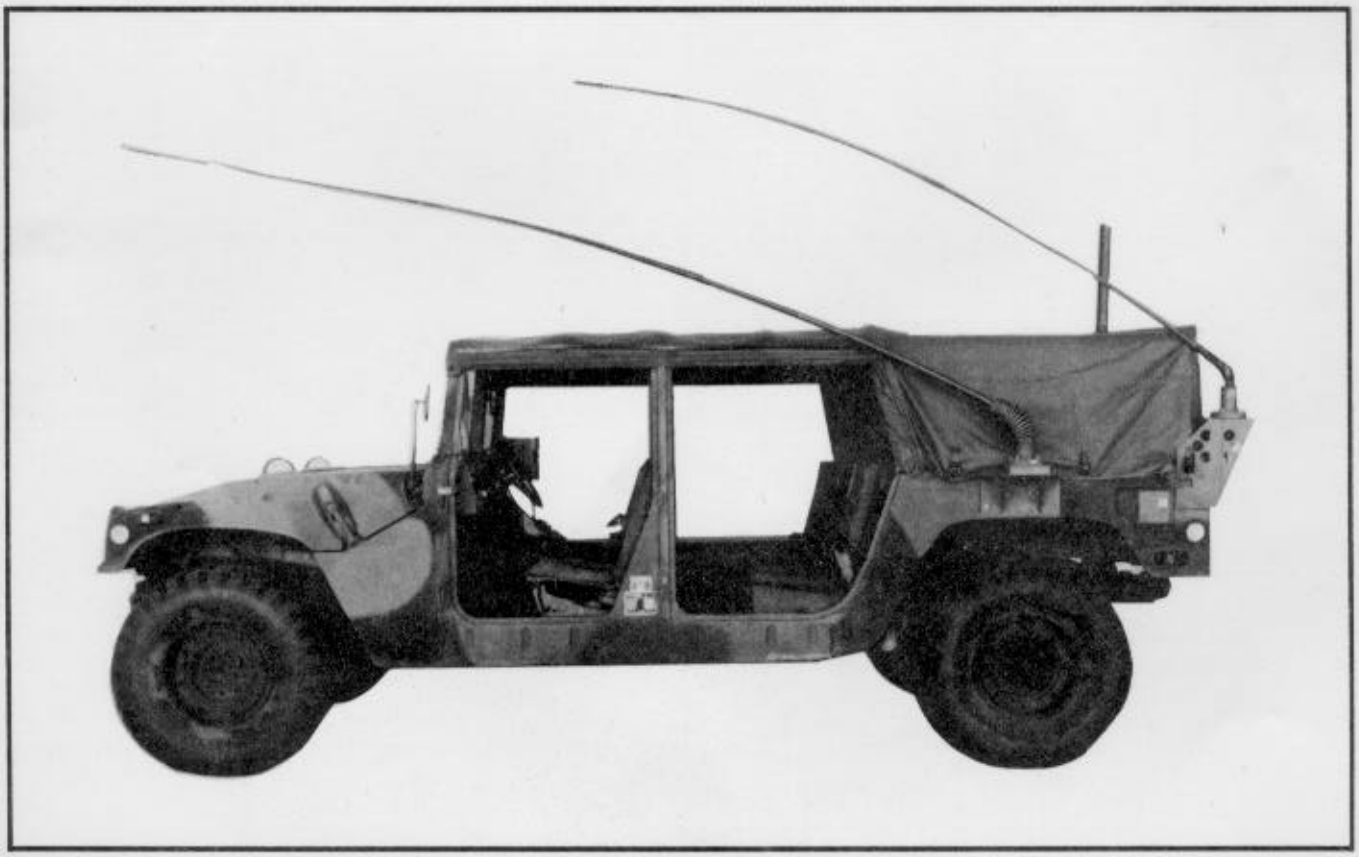


Figure 6-1. M998 HMMWV (four-seater)

6-2. Preparing Platform

Prepare a 16-foot, type V airdrop platform using four tandem links and 20 clevis assemblies as shown in Figure 5-2.

6-3. Preparing and Positioning Honeycomb Stacks

Use the material in Table 5-1 to prepare three honeycomb stacks as shown in Figures 5-3 and 5-4. Position the stacks on the platform as shown in Figures 5-5 and 5-6.

6-4. Preparing Truck

Prepare the truck as described below and as shown in Figures 6-2 through 6-6.

a. Make sure the fuel tank is no more than 1/2 full.

b. Remove the top and rear covers.

c. Remove the doors.

d. Tape all lights, reflectors, and gauges.

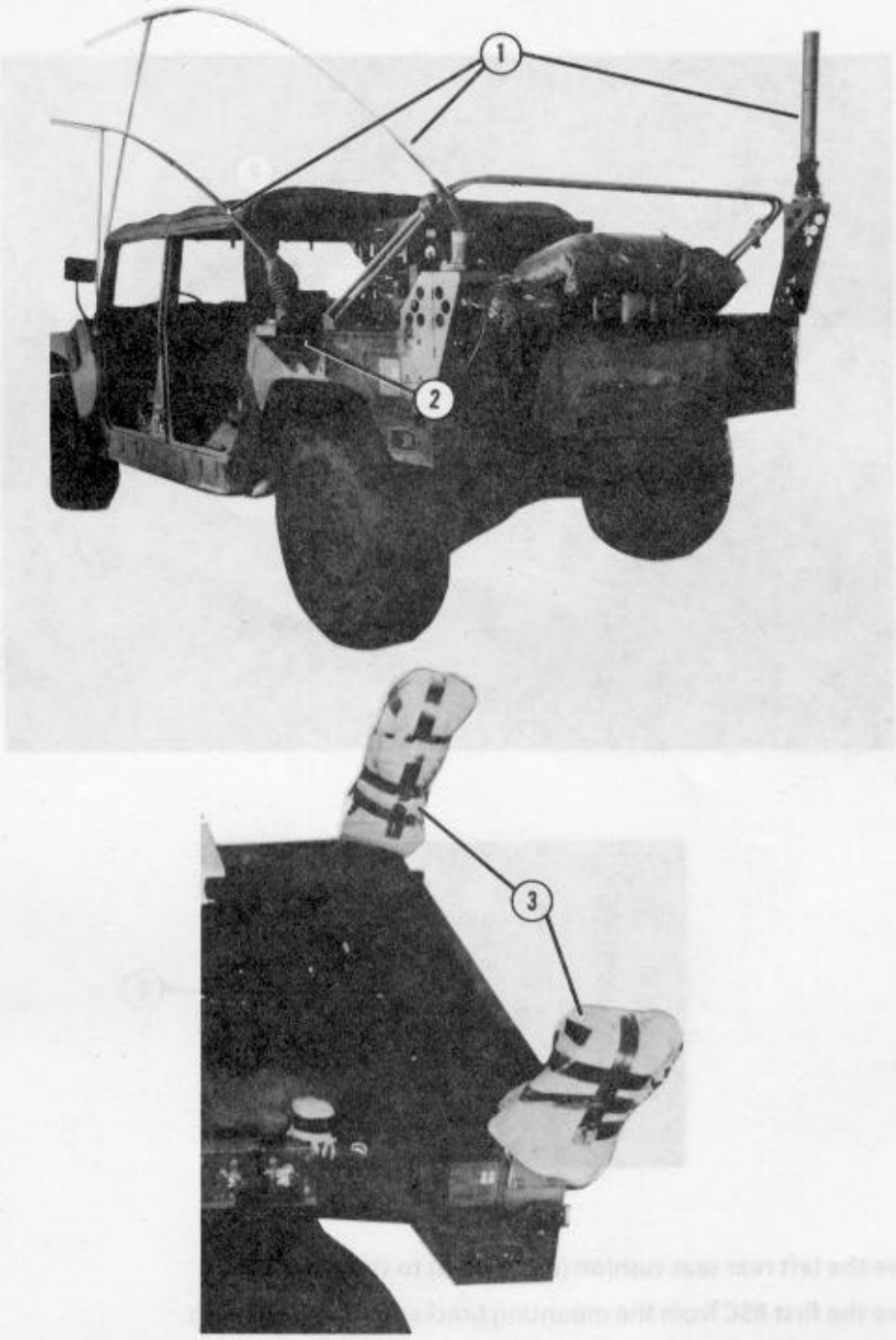
e. Tape the windshield.

f. Remove rear bows and the rear bow frame.

g. Prepare the front of the truck as shown in Figure 5-14.

h. Prepare the cab of the truck as shown in Figure 5-15.

i. Prepare the underside of the truck as shown in Figure 5-16.



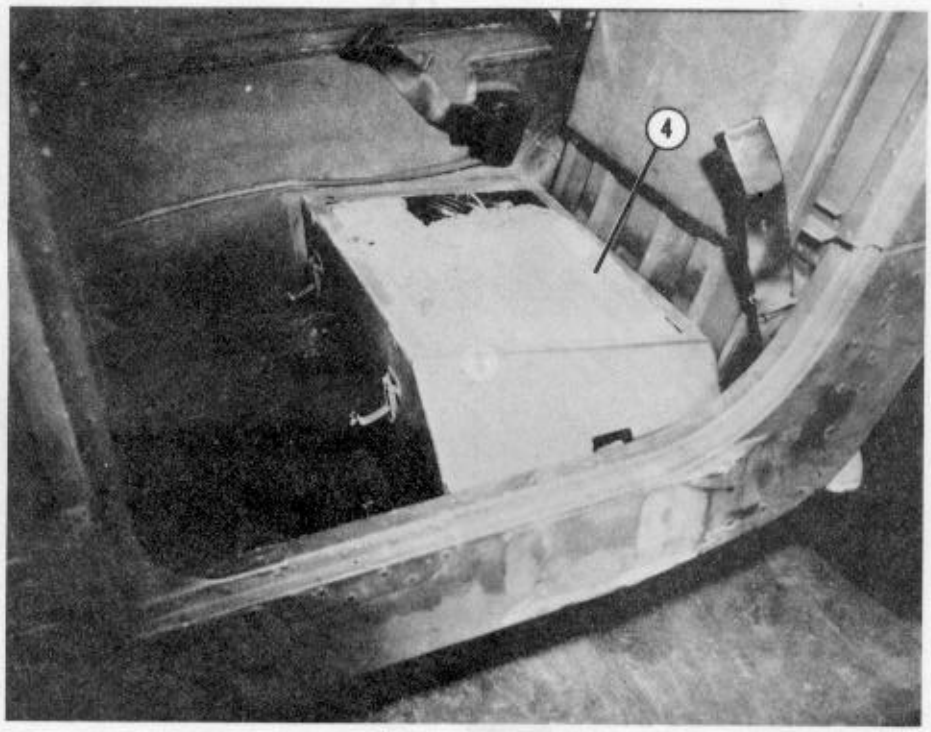
(1) Remove the FM and dual VHF/UHF antennas and mounts.

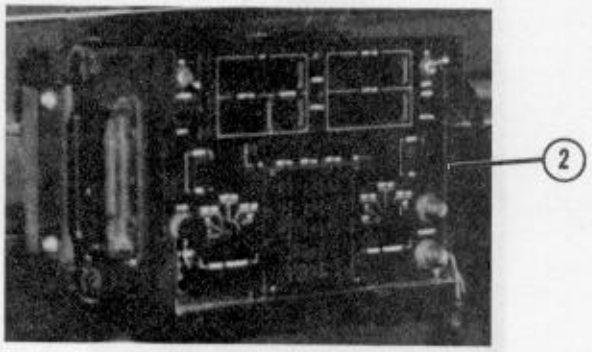
(2) Remove the FM and dual VHF/UHF antenna mount and bracket on the left side of the truck.

NOTE: Place the bolts back in their holes, and secure them with tape.

(3) Pad the antenna mount brackets with cellulose wadding, and tape the cellulose wadding in place.

Figure 6-2. Antennas removed





(1) Remove the left rear seat cushion (not shown) to store the RSCs.

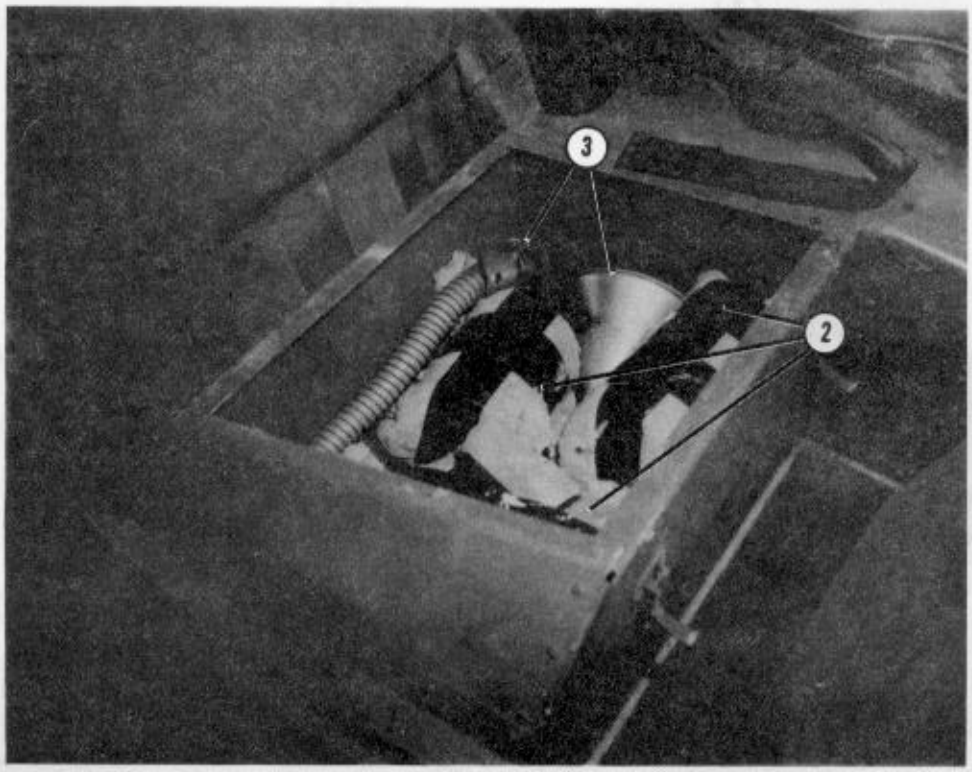
(2) Remove the first RSC from the mounting bracket on the front dash.

(3) Remove the second RSC from the right side of the GRC/206 Air Force communication system (not shown).

(4) Wrap both RSCs in cellulose wadding. Place the RSCs in the left rear seat.

(5) Place the seat cushion in its original position (not shown), and safety it using type III nylon cord (not shown).

Figure 6-3. RSCs secured



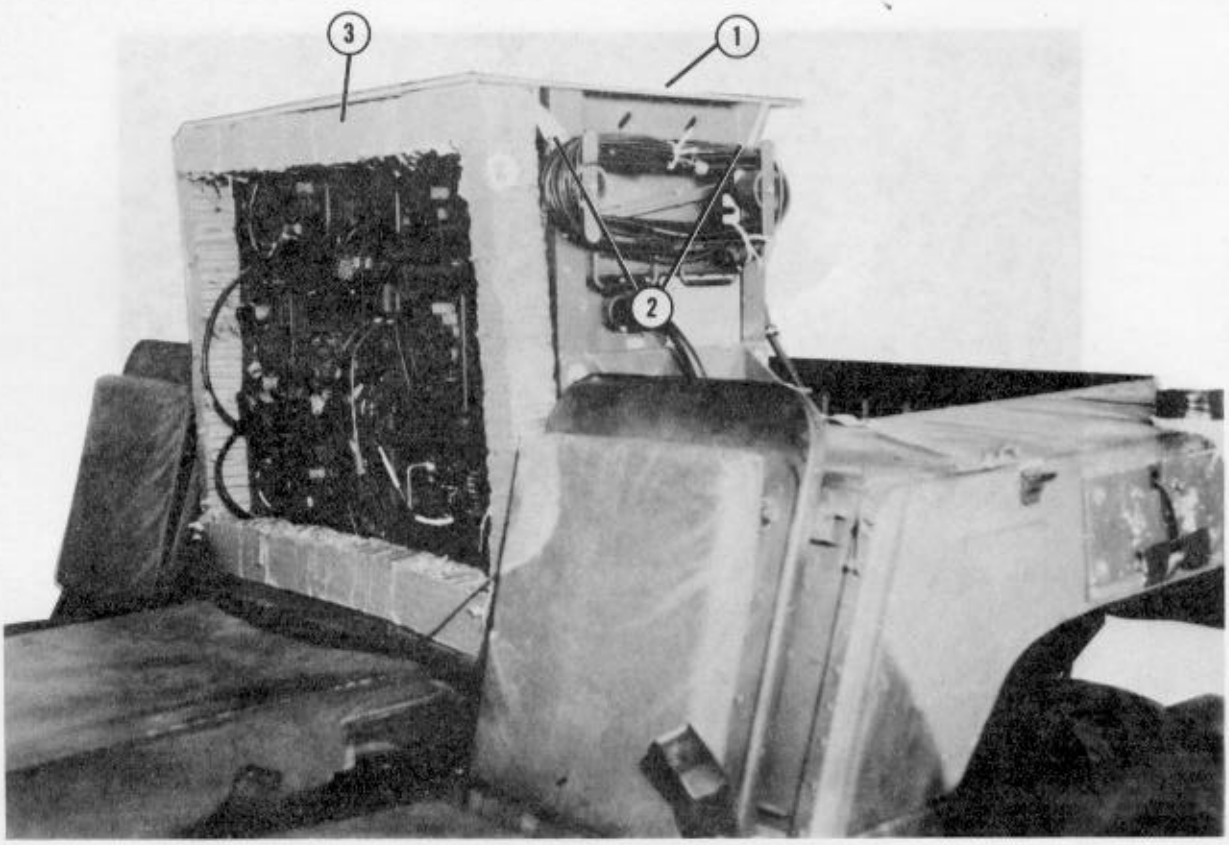
(1) Remove the right rear seat cushion (not shown) to store items.

(2) Wrap 2 quarts of oil and 1 quart of transmission fluid with cellulose wadding. Place them in the right rear seat.

(3) Place the funnel and fuel nozzle in the right rear seat.

(4) Place the seat cushion in its original position (not shown).

Figure 6-4. Oil and transmission fluid secured

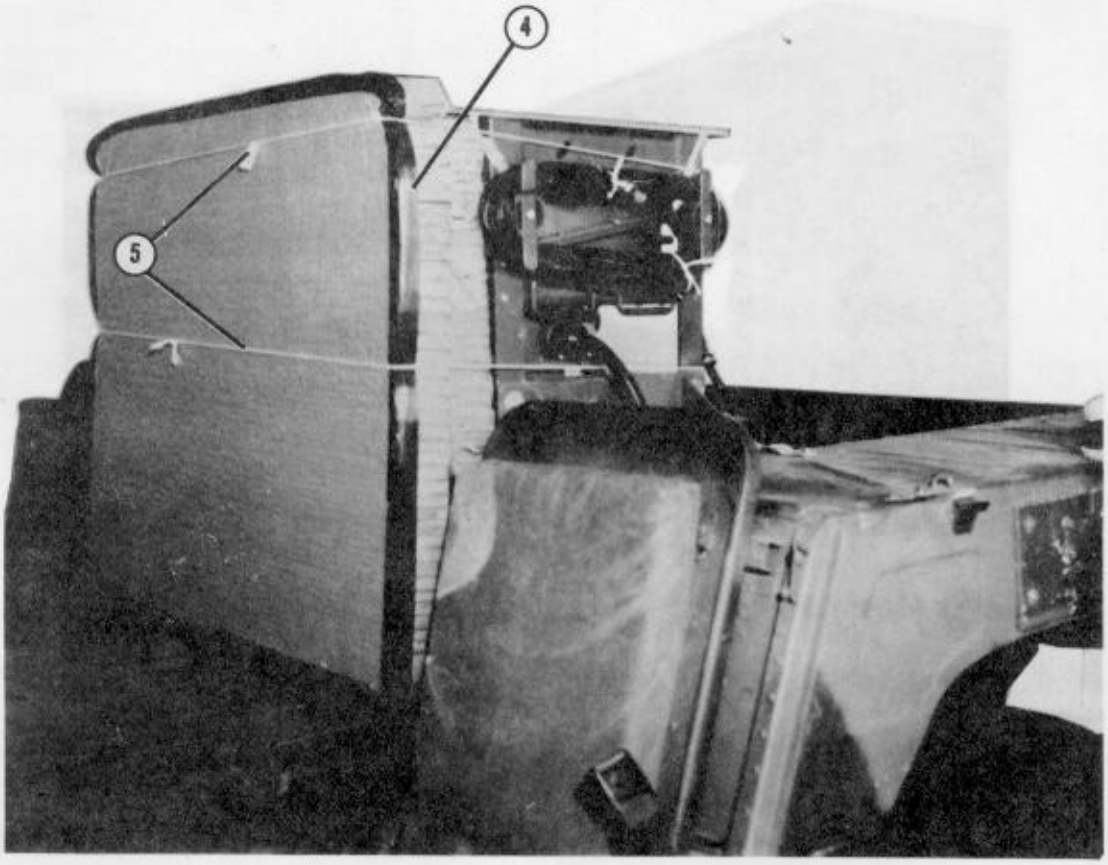


(1) Place a 3/4- by 40- by 22-inch piece of plywood on top of the GRC/206 radio pallet.

(2) Secure the plywood in place with a length of 1/2-inch tubular nylon webbing.

(3) Make a 26- by 35-inch cutout in the center of a 33- by 40-inch piece of honeycomb. Place the honeycomb in front of the GRC/206 radio pallet.

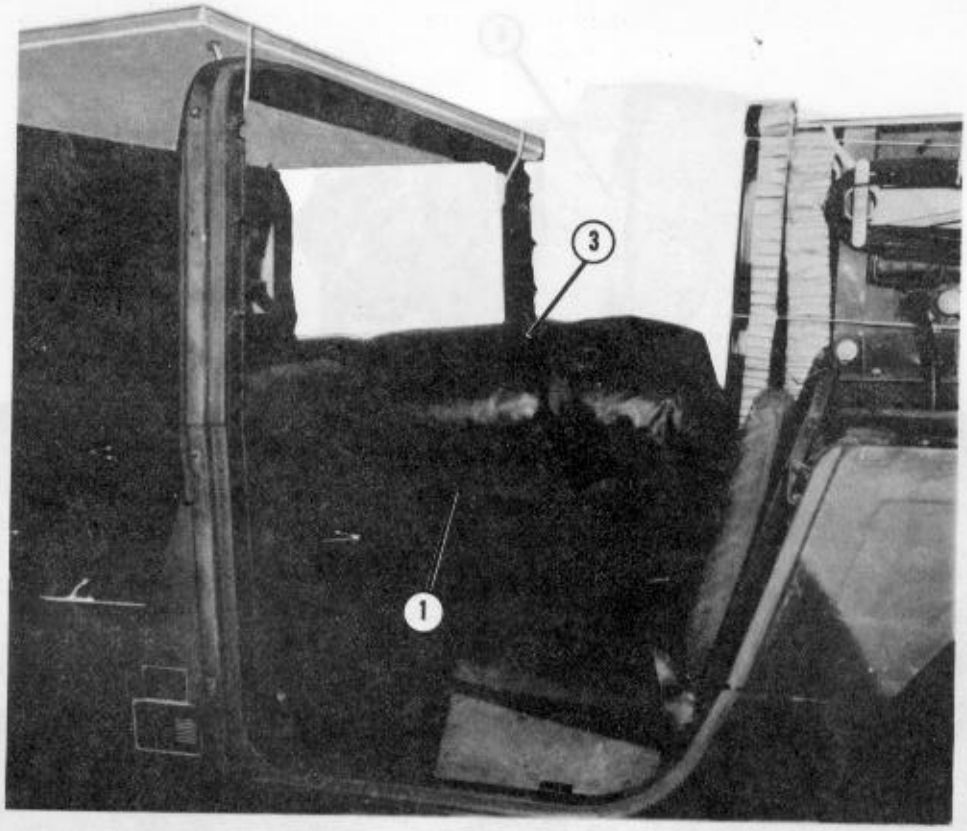
Figure 6-5. Radio pallet secured



(4) Place a 33- by 40-inch piece of honeycomb against the first piece of honeycomb. Tape the edges of the second piece of honeycomb.

(5) Secure the honeycomb pieces to the GRC/206 radio pallet with type III nylon cord.

Figure 6-5. Radio pallet secured (continued)



(1) Fold and place the front and rear top covers in the center of the passenger compartment of the vehicle.

(2) Place the camouflage poles (not shown) to the right of the top covers.

(3) Place an axe and a shovel inside the camouflage net. Place the camouflage net on top of the covers.

NOTE: If the vehicle doors are to be dropped, stack the doors on top of the camouflage net.

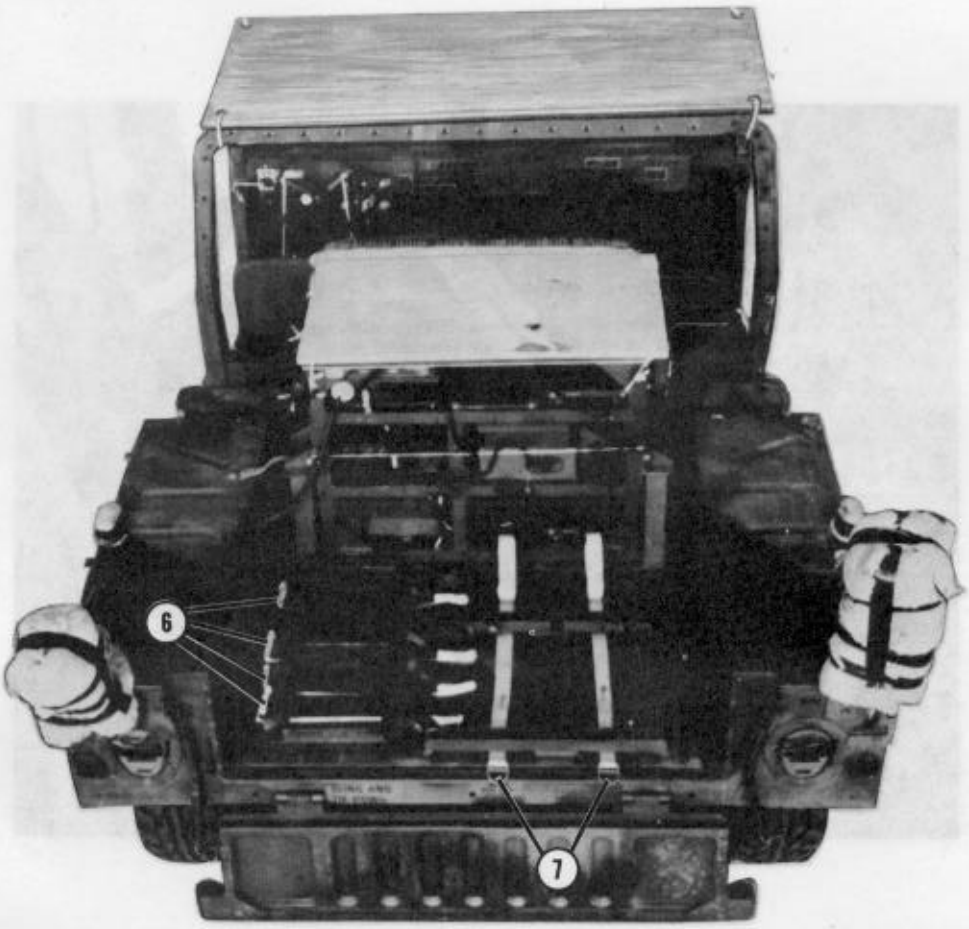
Figure 6-6. Accompanying load secured

NOTE: If the vehicle doors are being dropped, make sure they are under the lashings securing the camouflage net and poles.

(4) Pass a 15-foot lashing around the left front frame of the GRC/206 radio pallet, over the top of the camouflage net and poles, and around the frame support behind the front passenger seat. Secure the lashing on top of the camouflage net according to FM 10-500-2/TO 13C7-1-5.

(5) Pass a 15-foot lashing around the right front frame of the GRC/206 radio pallet, over the top of the camouflage net and poles, and around the frame support behind the driver seat. Secure the lashing on top of the camouflage net according to FM 10-500-2/TO 13C7-1-5.

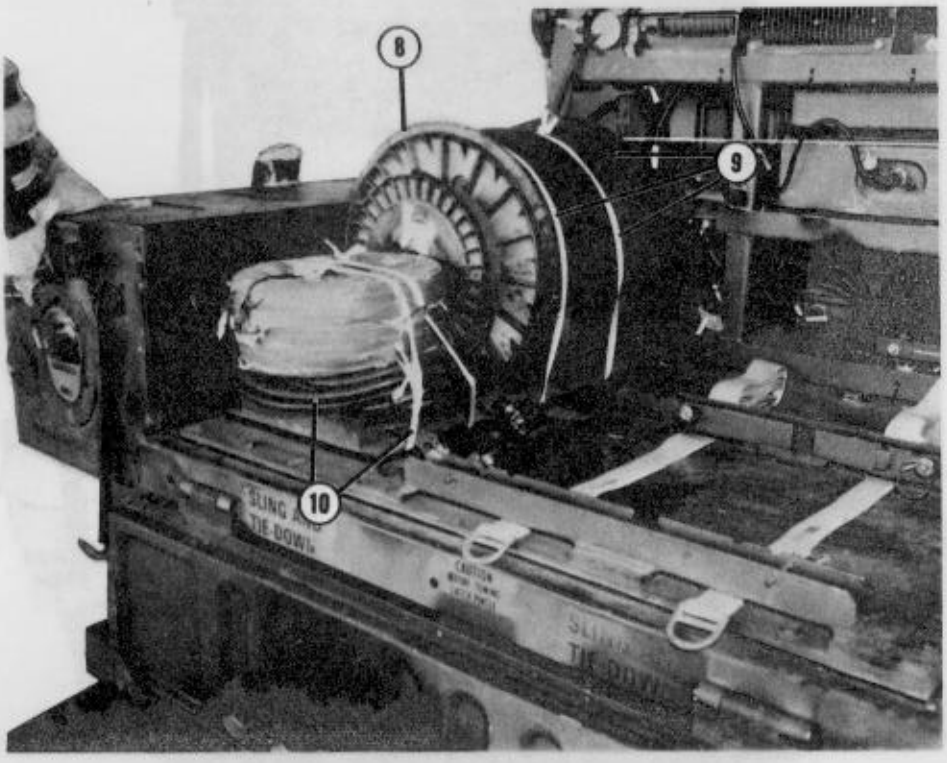
Figure 6-6. Accompanying load secured (continued)



(6) Place four lengths of 1/2-inch tubular nylon webbing under the fiber-optic cable bracket in the cargo bed of the truck.

(7) Place two 15-foot lashings from rear to front under the generator support bracket in the cargo bed of the truck.

Figure 6-6. Accompanying load secured (continued)



(8) Secure the fiber-optic cable to the fiber-optic cable bracket with its securing straps.

(9) Place a 1/2- by 14- by 36-inch piece of felt on top of the fiber-optic cable. Safety the cable in place with two pre-positioned lengths of 1/2-inch tubular nylon webbing.

(10) Position the slave cable on the fiber-optic cable bracket to the rear of the fiber-optic cable. Position the roll of field wire on top of the slave cable. Secure them in place with two pre-positioned lengths of 1/2-inch tubular nylon webbing.

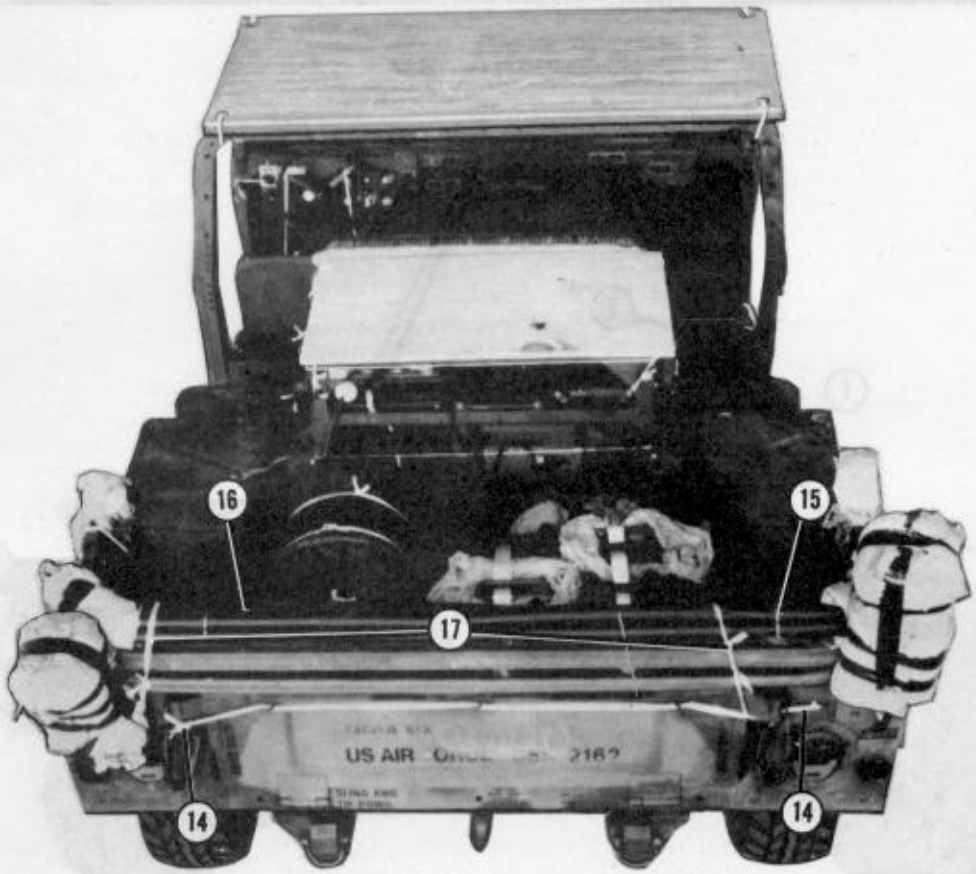
Figure 6-6. Accompanying load secured (continued)

(11) Pad and tape the antenna mounts. Place the antenna mounts to the front of the generator bracket supports on the two pre-positioned 15-foot lashings.

(12) Place two fuel cans and two water cans to the rear of the antenna mounts. Pad the cans with cellulose wadding so that there is no metal-to-metal contact. Tape the cellulose wadding in place.

(13) Secure the antenna mounts and cans with two 15-foot pre-positioned lashings. Secure the lashings according to FM 10-500-2/TO 13C7-1-5.

Figure 6-6. Accompanying load secured (continued)



(14) Close the tailgate, and secure it with a length of 1/2-inch tubular nylon webbing.

(15) Place the frame and bow assemblies on the rear of the cargo bed. Tie them together with type III nylon cord.

(16) Place the antennas and antenna boots on the rear of the cargo bed.

(17) Secure the frame, bow assemblies, antennas, and antenna boots with a length of 1/2-inch tubular nylon webbing to the tailgate.

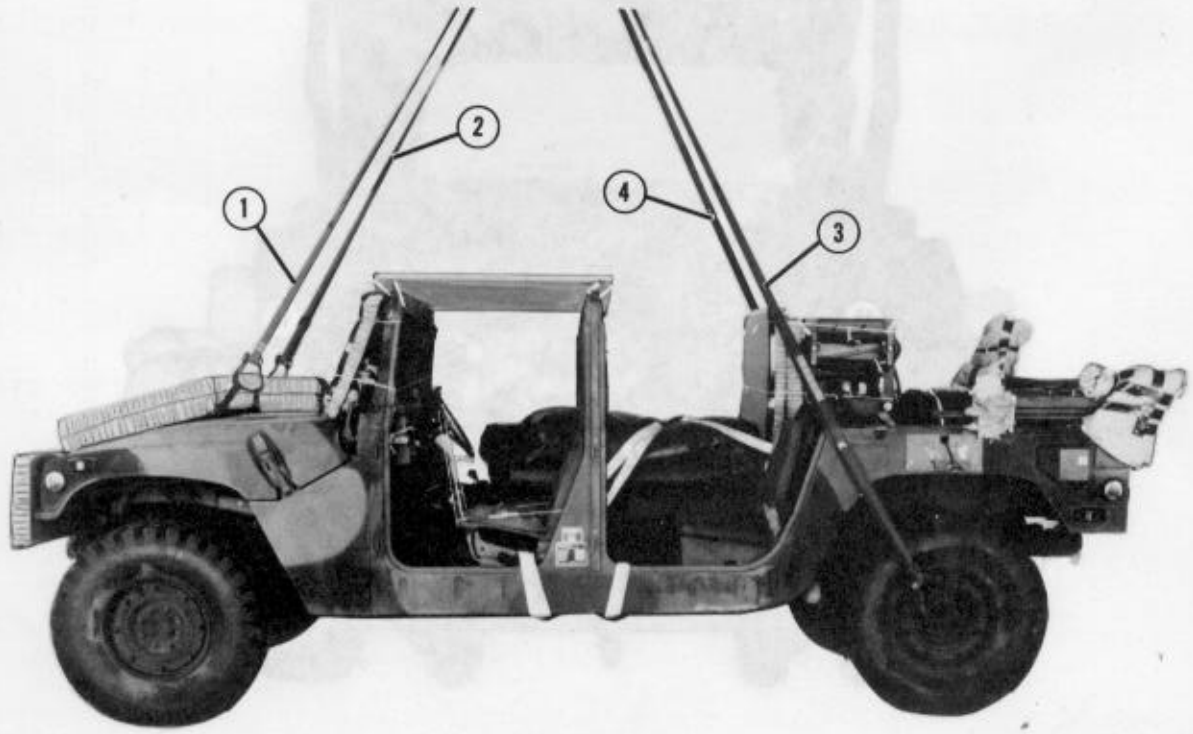
Figure 6-6. Accompanying load secured (continued)

6-5. Installing Lifting Slings

Install lifting slings as shown in Figure 6-7.

6-6. Positioning Truck

Position the truck on the platform as shown in Figure 5-18.



(1) Pass a medium clevis through the end of a 9-foot (2-loop), type XXVI nylon webbing sling. Pass another medium clevis through the left front lifting point on the hood of the truck and through the medium clevis of the 9-foot sling.

(2) Repeat step 1 above for the right front lifting point.

(3) Pass a medium clevis through the end of a 12-foot (2-loop), type XXVI nylon webbing sling. Install the medium clevis to the lifting shackle on the left rear wheel.

(4) Repeat step 3 above for the right rear wheel shackle.

Figure 6-7. Lifting slings installed

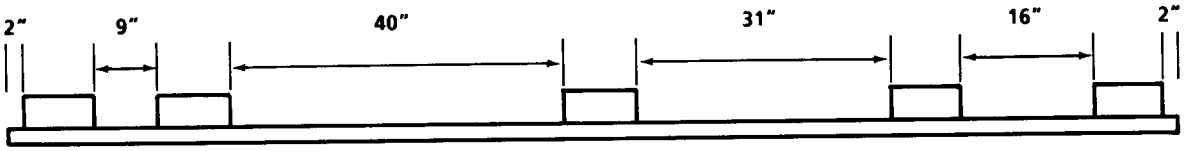
6-7. Lashing Truck

Lash the truck to the platform using eighteen 15-foot tie-down assemblies. Install the lashings according to FM 10-500/TO 13C7-1-5 and as shown in Figures 5-19 and 5-20.

6-8. Building Body Protection Boards

Build two body protection boards as shown in Figure 6-8.

NOTE: This drawing is not drawn to scale.



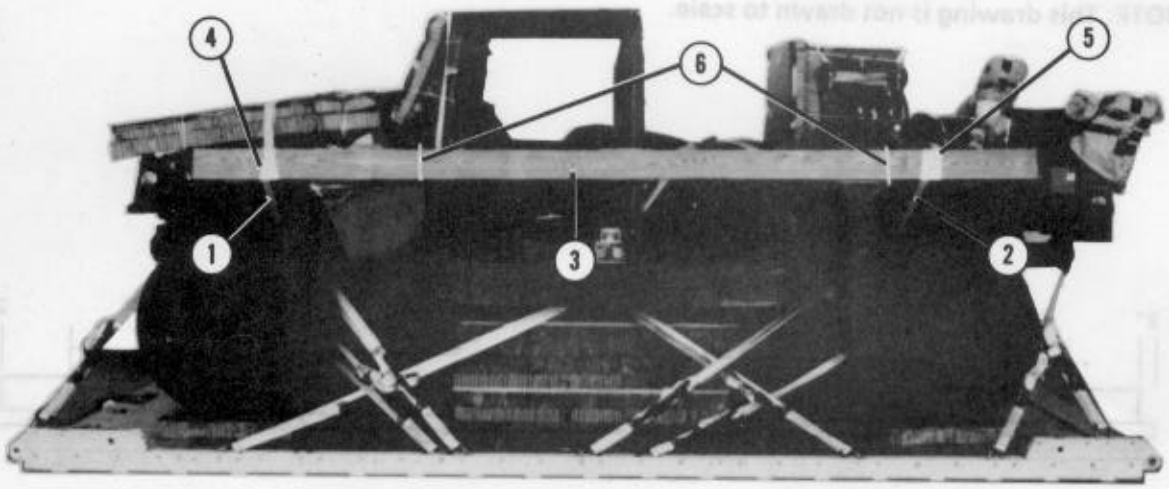
Step:

1. Use one 2- by 6- by 150-inch piece of lumber and five 6- by 10-inch pieces of honeycomb.
2. Glue or tape the first piece of honeycomb 2 inches from either end of the board.
3. Glue or tape the second piece of honeycomb 16 inches behind the first piece of the board.
4. Glue or tape the third piece of honeycomb 31 inches behind the second piece of honeycomb.
5. Glue or tape the fourth piece of honeycomb 40 inches behind the third piece of honeycomb.
6. Glue or tape the fifth piece of honeycomb 9 inches behind the fourth piece of honeycomb.
7. Use the procedures in steps 1 through 6 above to build the second body protection board.

Figure 6-8. Body protection boards built

6-9. Securing Body Protection Boards

Secure the body protection boards on the truck as shown in Figure 6-9.



(1) Pass a 15-foot tie-down strap around the upper control arm and through its own D-ring on the right front and left front of the truck.

(2) Pass a 15-foot tie-down strap around the upper control arm and through its own D-ring on the right rear and left rear of the truck.

(3) Hold both body protection boards up against the truck with the first piece of honeycomb positioned at the rear of the truck.

(4) Run the 15-foot tie-down straps positioned in step 1 above around the boards on the right front and left front of the truck. Secure the ends with D-rings and a load binder.

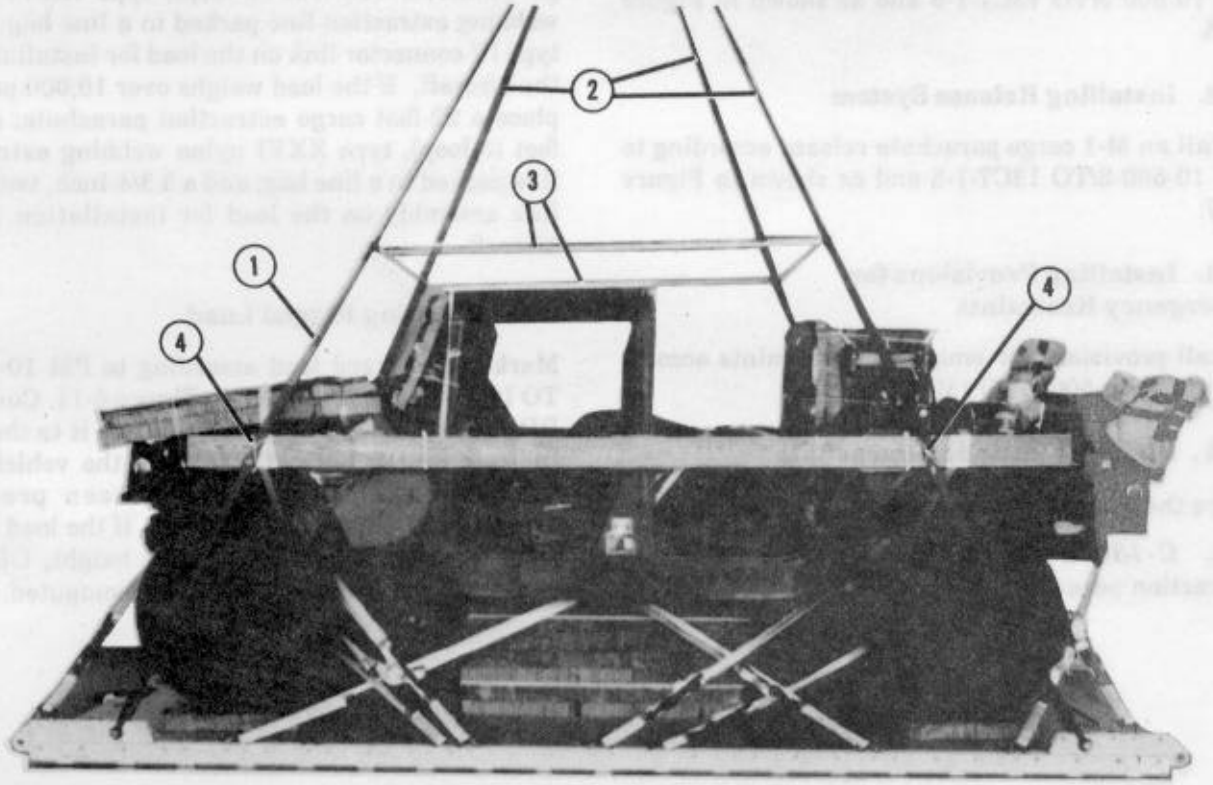
(5) Repeat the procedures in step 4 above for the right rear and left rear of the truck.

(6) Safety the body protection boards to the mirror brackets in the front and to a convenient point in the rear of the vehicle with type III nylon cord.

Figure 6-9. Body protection boards secured

6-10. Installing Suspension Slings and Deadman's Tie

Install the suspension slings and the deadman's tie as shown in Figure 6-10.



(1) Attach a 16-foot (2-loop), type XXVI nylon webbing suspension sling to a large clevis. Attach the clevis to one of the tandem links. Push the sling keepers down, and tape them in place.

(2) Repeat the procedure in step 1 above for the other three tandem links.

(3) Raise the four suspension slings above the load, and install a deadman's tie according to FM 10-500-2/TO 13C7-1-5.

(4) Remove all slack from the suspension slings, and safety the suspension slings to the body protection boards using type III nylon cord.

Figure 6-10. Suspension slings and deadman's tie installed

6-11. Stowing Cargo Parachutes

Stow two G-11B or three G-11A cargo parachutes according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 5-25.

6-12. Installing Extraction System

Install the EFTC extraction system according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 5-26.

6-13. Installing Release System

Install an M-1 cargo parachute release according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 5-27.

6-14. Installing Provisions for Emergency Restraints

Install provisions for emergency restraints according to FM 10-500-2/TO 13C7-1-5.

6-15. Placing Extraction Parachute

Place the extraction parachute as described below.

a. C-130 Aircraft. Place a 22-foot cargo extraction parachute; a 60-foot (3-loop), type XXVI nylon webbing extraction line rigged in a line bag; and a 3 3/4-inch, two-point link assembly on the load for installation in the aircraft.

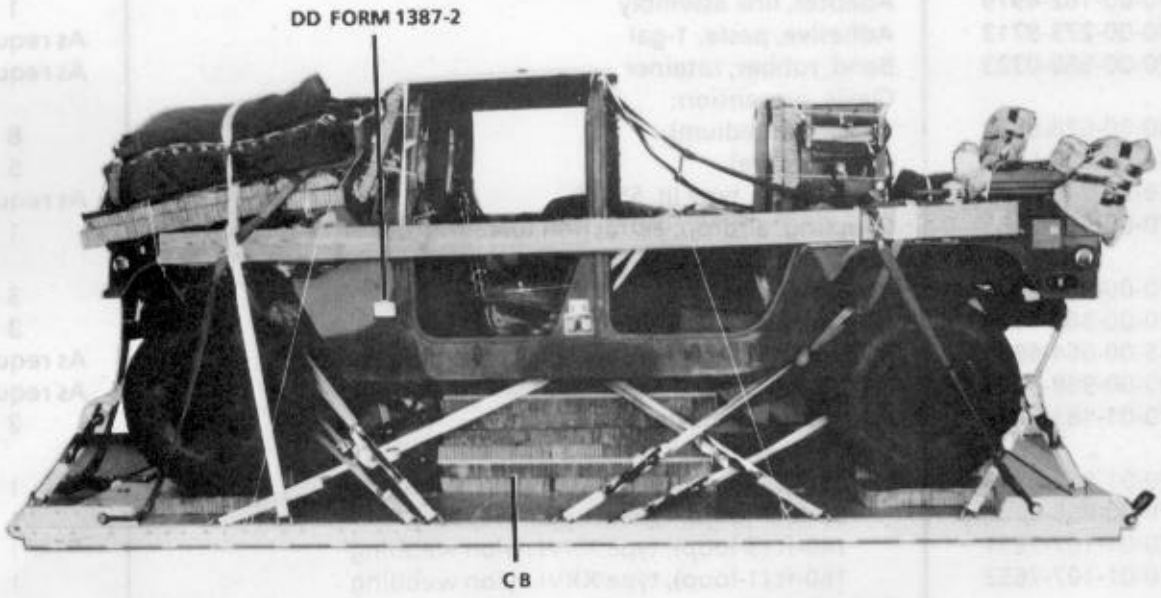
b. C-141 Aircraft. If the load weighs 10,000 pounds or less, place a 15-foot cargo extraction parachute; a 160-foot (1-loop), type XXVI nylon webbing extraction line packed in a line bag; and a type IV connector link on the load for installation in the aircraft. If the load weighs over 10,000 pounds, place a 22-foot cargo extraction parachute; a 140-foot (3-loop), type XXVI nylon webbing extraction line packed in a line bag; and a 3 3/4-inch, two-point link assembly on the load for installation in the aircraft.

6-16. Marking Rigged Load

Mark the rigged load according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 6-11. Complete DD Form 1387-2, and securely attach it to the load. Indicate on DD Form 1387-2 that the vehicle fuel tank and the batteries have been prepared according to AFR 71-4/TM 38-250. If the load varies from the one shown, the weight, height, CB, and parachute requirements must be recomputed.

CAUTION

Make the final rigger inspection required by FM 10-500-2/TO 13C7-1-5 before the load leaves the rigging site.



RIGGED LOAD DATA

Weight:	Load shown	8,760 pounds
	Maximum load allowed	10,500 pounds
Height:	Two parachutes	86 inches
	Three parachutes	98 inches
Width		108 inches
Length		214 inches
Overhang:	Front	4 inches
	Rear	18 inches
CB (from front edge of platform)		98 inches
Extraction system		EFTC

Figure 6-11. M998 (four-seater) with GRC/206 Air Force pallet rigged on a type V platform for low-velocity airdrop

6-17. Equipment Required

Use the equipment listed in Table 6-1 to rig this load.

Table 6-1. Equipment required for rigging the M998 (four-seater) with GRC/206 Air Force pallet on a type V platform for low-velocity airdrop

National Stock Number	Item	Quantity
1670-00-162-4979	Adapter, link assembly	1
8040-00-273-8713	Adhesive, paste, 1-gal	As required
1670-00-568-0323	Band, rubber, retainer	As required
	Clevis, suspension:	
4030-00-678-8562	3/4-in (medium)	8
4030-00-090-5354	1-in (large)	5
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-434-5785	Coupling, airdrop, extraction force transfer w 16-ft cable	1
	Cover:	
1670-00-360-0328	Clevis, large	3
1670-00-360-0329	Link assembly (type IV)	3
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
8305-00-958-3685	Felt, 1/2-in thick	As required
1670-01-183-2678	Leaf, extraction line	2
	Line, extraction:	
1670-01-062-6313	60-ft (3-loop), type XXVI nylon webbing	1
1670-00-856-0266	60-ft (3-loop), type X nylon webbing	1
1670-01-107-7651	140-ft (3-loop), type XXVI nylon webbing	1
1670-01-107-7652	160-ft (1-loop), type XXVI nylon webbing	1
	Link assembly:	
	Two-point:	1
5306-00-435-8994	Bolt, 1-in diam, 4-in long	(2)
5310-00-232-5165	Nut, 1-in, hexagon	(2)
1670-00-003-1953	Plate, side, 3 3/4-in	(2)
5365-00-007-3414	Spacer, large	(2)
1670-00-783-5988	Type IV	3
5510-00-220-6448	Lumber, 2- by 6-in:	
	16-in	1
	150-in	2
1670-00-753-3928	Pad, energy-dissipating, honeycomb,	
	3- by 36- by 96-in:	14 sheets
	6- by 10-in	(10)
	6- by 24-in	(2)
	8- by 24-in	(2)
	8- by 54-in	(6)
	10- by 10-in	(5)
	12- by 12-in	(1)
	12- by 22-in	(8)
	12- by 54-in	(4)
	12- by 82-in	(2)
	20- by 6-in	(8)

Table 6-1. Equipment required for rigging the M998 (four-seater) with GRC/206 Air Force pallet on a type V platform for low-velocity airdrop (continued)

National Stock Number	Item	Quantity
	20- by 24-in	(2)
	21- by 83-in	(1)
	33- by 40-in	(2)
	36- by 82-in	(2)
	42- by 10-in	(2)
	54- by 24-in	(8)
	80- by 24-in	(2)
	Parachute:	
	Cargo:	
1670-00-269-1107	G-11A *or*	3
1670-01-016-7841	G-11B	2
	Cargo extraction:	
1670-01-063-3715	15-ft *or*	1
1670-00-052-1548	15-ft	1
1670-01-063-3716	22-ft *or*	1
1670-00-687-5458	22-ft	1
	Platform, AD, type V, 16-ft:	1
	Bracket:	
1670-01-162-2375	Inside EFTA	(1)
1670-01-162-2374	Outside EFTA	(1)
1670-01-162-2372	Clevis assembly	(22)
1670-01-162-2376	Extraction bracket assembly	(1)
1670-01-162-2381	Tandem link	(4)
5530-00-128-4981	Plywood, 3/4-in:	
	8- by 54-in	2
	10- by 10-in	2
	12- by 54-in	2
	20- by 6-in	4
	36- by 82-in	1
	40- by 22-in	1
	54- by 24-in	2
1670-01-097-8816	Release, cargo parachute, M-1	1
	Sling, cargo airdrop:	
	For deployment:	
1670-01-063-7761	16-ft (2-loop), type XXVI nylon webbing	1
	For lifting:	
1670-01-062-6304	9-ft (2-loop), type XXVI nylon webbing	2
1670-01-062-6303	12-ft (2-loop), type XXVI nylon webbing	2
	For riser extension:	
1670-00-823-5043	20-ft (3-loop), type X nylon webbing *or*	6
1670-01-062-6302	20-ft (2-loop), type XXVI nylon webbing	6
	For suspension slings:	
1670-01-063-7761	16-ft (2-loop), type XXVI nylon webbing	4
1670-00-998-0116	Strap, parachute release, w fastener and release knife	2
7510-00-266-5016	Tape, adhesive, 2-in	As required
1670-00-937-0271	Tie-down assembly, 15-ft	34

Table 6-1. Equipment required for rigging the M998 (four-seater) with GRC/206 Air Force pallet on a type V platform for low-velocity airdrop (continued)

National Stock Number	Item	Quantity
	Webbing:	
8305-00-268-2411	Cotton, 1/4-in, type I	As required
	Nylon:	
	Tubular:	
8305-00-082-5752	1/2-in *or*	As required
8305-00-268-2453	1/2-in	As required
8305-00-263-3591	Type VIII	As required

APPENDIX
REFERENCES

AFR 71-4/TM 38-250	Packaging and Materials Handling: Preparation of Hazardous Materials for Military Shipment
FM 10-500/TO 13C7-1-5	Airdrop of Supplies and Equipment: General Information for Rigging Airdrop Platforms
FM 10-553/TO 13C7-18-41	Airdrop of Supplies and Equipment: Rigging Ammunition
TM 9-2320-218-10	Operator's Manual for Truck, Utility: 1/4-Ton, 4 X 4, M151, M151A1, M151A2, 106-mm Recoilless Rifle, M151A1C, and Truck, Ambulance, Frontline: M718 and M718A1
TM 10-1670-208-20&P/ TO 13C3-4-12	Aviation Unit Maintenance Manual (Including Repair Parts and Special Tools List) for Platforms, Type II Modular and LAPES/Airdrop Modular